

LISTING OF THE CLAIMS

The following is a complete listing of all the claims in the application, with an indication of the status of each:

- 1 1. (Currently amended) A processor-implemented method for statistical regression using
2 ensembles of classification solutions comprising the steps of:
3 running employing a processor to run k-means clustering for k clusters on the set
4 of values $\{y_i, i = 1 \dots n\}$;
5 recording employing a processor to record a mean value m_j of a cluster c_j for
6 $j = 1 \dots k$;
7 transforming employing a processor to transform regression data into
8 classification data with a class label for an i-th case being a cluster number of y_i ;
9 applying employing a processor to apply ensemble classifier and obtain by a
10 machine learning method a set of rules R ; and
11 making employing a processor to make a prediction for new case u , using a
12 margin of M , where $0 \leq M \leq 1$.

- 1 2. (Currently amended) The processor-implemented method recited in claim 1, wherein
2 the step of making a prediction comprises the steps of:
3 applying employing a processor to apply all the rules R on the new case u ;
4 for each class i , counting employing a processor to count a number of satisfied
5 rules (votes) v_i ;
6 classifying employing a processor to classify t has the most votes, v_i ;

7 considering employing a processor to consider a set of classes $P = \{p\}$ such that

8 $v_p \geq M \cdot v_i$; and

9 generating employing a processor to generate a predicted output for case u ,

$$10 \quad y_u' = \frac{\sum_{j \in p} m_j v_j}{\sum_{j \in p} v_j}.$$

1 3. (Currently amended) A processor-implemented method of pattern recognition

2 comprising the steps of:

3 applying employing a processor to apply clustering processes to determine a
4 number of classes;

5 employing a processor to apply a machine learning method to find an ensemble of
6 classification rules;

7 applying employing a processor to apply ensemble learning classification
8 processes to predict most likely classes for a new example; and

9 then averaging employing a processor to average regression values of most likely
10 classes to predict a value of a new example.

1 4. (Currently amended) A processor-implemented method of pattern recognition for a set
2 of values, said method comprising the steps of:

3 determining employing a processor to determine a number of classes to be
4 generated based on a trend of error of a class mean/median for the set of values;

5 classifying employing a processor to classify the values using ensemble learning
6 classification and the determined number of classes;

7 generating employing a processor to generate by a machine learning method a set
8 of classification rules; and

9 averaging employing a processor to average regression values of most likely

10 classes to predict a value of a new example based on the set of rules.

1 5. (Currently amended) A processor-implemented method of pattern recognition
2 according to claim 4, wherein said step of determining a number of classes comprises the
3 steps of:

4 determining employing a processor to determine the class mean/median for a
5 variable number of classes;

6 determining employing a processor to determine a mean absolute deviation
7 (MAD) based on the class means/medians; and

8 comparing employing a processor to compare the MAD to a predetermined
9 percentage of MAD.

1 6. (Currently amended) A processor-implemented method of pattern recognition
2 according to claim 4, wherein the step of averaging regression values includes using
3 employing a processor to use margins for predicting the value of the new example.

1 7. (Currently amended) A processor-implemented method of pattern recognition
2 according to claim 4, wherein the step of averaging regression values comprises the steps
3 of:

4 applying employing a processor to apply the set of classification rules to the new
5 example;

6 for each class i , counting employing a processor to count a number of satisfied
7 rules (votes) v_i ;

8 classifying employing a processor to classify t has the most votes, v_i ;

9 considering employing a processor to consider a set of classes $P = \{p\}$ such that
10 $v_p \geq M \cdot v_i$; and

11 generating employing a processor to generate a predicted output for case u , $y_u' =$

$$12 \quad \frac{\sum_{j \in p} m_j v_j}{\sum_{j \in p} v_j}.$$